WHAT IS CLAIMED IS:

1. An optical disk apparatus comprising:

a drive motor for rotating an optical disk;

rotation angle detection means for detecting a rotation angle of said drive motor;

a first objective lens;

a first objective lens holder which holds said first objective lens and is supported to be drivable in an optical axis direction of said first objective lens and in one direction perpendicular to the optical axis;

a first focusing actuator for driving said first objective lens holder in the optical axis direction;

first focus detection means for detecting a relative deviation between said first objective lens and an information recording surface of the optical disk in the optical axis direction, and adjusting a focus to the information recording surface;

first drive control means for controlling driving of said first focusing actuator on the basis of a detection result of said first focus detection means;

storage means for storing a drive control signal output from said first drive control means and a rotation angle detection signal detected by said rotation angle detection means in synchronism with each other;

a second objective lens having a focal length shorter than said first objective lens;

a second objective lens holder which holds said second objective lens and is supported to be drivable in an optical axis direction of said second objective lens and in one direction perpendicular to the optical axis;

a second focusing actuator for driving said second objective lens holder in the optical axis direction;

second focus detection means for detecting a relative deviation between said second objective lens and the information recording surface of the optical disk in the optical axis direction, and adjusting a focus to the information recording surface;

second drive control means for controlling driving of said second focusing actuator on the basis of a detection result of said second focus detection means; and

focus lead-in means for controlling said second drive control means to drive said second focusing actuator on the basis of information stored in said storage means, and executing a focus lead-in operation.

2. An optical disk apparatus comprising:

an objective lens;

an objective lens holder which holds said objective lens and is supported to be drivable in an optical axis direction of said objective lens and in one direction perpendicular to the optical axis;

a focusing actuator for driving said objective

lens holder in the optical axis direction;

first focus detection means for detecting a deviation in the optical axis direction on the basis of reflected light of light beam components focused at a first numerical aperture of light beam components focused by said objective lens, and adjusting the light beam to form a focal point on an information recording surface of an optical disk;

second focus detection means for detecting a deviation in the optical axis direction on the basis of reflected light of light beam components focused at a second numerical aperture lower than the first numerical aperture of light beam components focused by said objective lens, and adjusting the light beam to form a focal point on the information recording surface of the optical disk;

addition means for adding a focus error signal detected by said second focus detection means to a focus error signal detected by said first focus detection means; and

drive control means for driving said focusing actuator in accordance with an output from said addition means.

3. An apparatus according to claim 2, wherein said first focus detection means adjusts the focal point of the light beam on the basis of reflected light of light beams, which are away from an optical axis

center in the direction perpendicular to the optical axis by a predetermined range, of the light beam components which enter said objective lens, and

said second focus detection means adjusts the focal point of the light beam on the basis of reflected light of light beam components within the predetermined range from the optical axis center in the direction perpendicular to the optical axis, of the light beam components which enter said objective lens.

4. An apparatus according to claim 2, wherein an in-focus point of said second focus detection means is located on the objective lens side compared to an in-focus point of said first focus detection means.

5. An apparatus according to claim 4, wherein the in-focus point of said second focus detection means is deviated toward the objective lens side by electrically offsetting a focus error signal which represents the deviation in the optical axis direction detected by said second focus detection means.

6. An apparatus according to claim 2, further comprising drive control means for controlling driving of said objective lens holder to adjust a focal point to an in-focus point of said first detection means by focus jump after the focal point is adjusted to the in-focus point of said second focus detection means upon executing focus control with respect to the information recording surface of the optical disk.

7. An optical disk processing method comprising:

the first step of executing a focus lead-in process by irradiating a rotating predetermined optical disk with a light beam applied via a first objective lens of a first optical system, said first objective lens having a first numerical aperture lower than a second numerical aperture of a second objective lens of a second optical system;

the second step of discriminating an optical system suitable for a recording/reproduction process of the optical disk;

the third step of processing the optical disk, when the optical system suitable for the recording/reproduction process of the optical disk is the first optical system, by irradiating the optical disk with the light beam via the first objective lens of the first optical system; and

the fourth step of processing the optical disk, when the optical system suitable for the recording/reproduction process of the optical disk is the second optical system, by irradiating the optical disk with the light beam via the second objective lens of the second optical system.

8. A method according to claim 7, wherein the fourth step comprises:

the fifth step of irradiating the optical disk with the light beam via the first objective lens of the

first optical system, and detecting surface run-out of the optical disk from the reflected light of the light beam;

the sixth step of executing the focus lead-in process by irradiating the optical disk with the light beam via the second objective lens of the second optical system on the basis of a surface run-out learning result of the optical disk detected in the fifth step; and

the seventh step of executing the recording/reproduction process on the optical disk by irradiating the optical disk with the light beam via the second objective lens of the second optical system.

9. A method according to claim 7, wherein the first step includes the step of:

executing the focus lead-in process by irradiating the optical disk with the light beam via the first objective lens of the first optical system while the second objective lens of the second optical system is retracted not less than a predetermined distance away from the optical disk.